

THE ORGANIZATION OF MENTAL ABILITIES
OF AN AFRICAN ETHNIC GROUP
IN CULTURAL TRANSITION

by

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Thesis submitted to the Department of Psychology of
the University of the Witwatersrand in fulfilment of
the requirements for the degree of Doctor of Philosophy.

September, 1969.

DECLARATION BY CANDIDATE

I HEREBY DECLARE THAT

1. This thesis is my own work.
2. It has not been submitted to any other university.

Cherant

ACKNOWLEDGEMENTS

I wish to express my gratitude to:

Dr G.A. Doyle, my supervisor, for guidance and advice;

The South African National Committee for the International Biological Programme and the South African Council for Scientific and Industrial Research who sponsored the project;

Mr D.J.M. Vorster who, as Director of the National Institute for Personnel Research and Chairman of the Human Adaptability Committee of the I.B.P., granted me permission to publish the investigation and allowed me to make use of the Institute's facilities;

The Trustees of the Julius Robinson Charitable and Educational Trust for their generous bursary;

Mr J.M. Schepers, head of the Psychometric Division, for his statistical advice and moral support;

Dr M.W. Browne, who gave unstintingly of his time to explain complex statistical procedures;

Dr H. Reuning, who appraised the pilot studies and was always willing to discuss the theoretical issues involved in the investigation;

Mr R.H. Hall and members of his staff, particularly Miss C.M. Elder, for the assistance given me in analysing the data by computer;

Mrs M. Barrett, who wrote a special computer programme for the investigation;

Mrs L.E. Andor and members of the library staff of the N.I.P.R. for their co-operation and assistance in obtaining background information;

Mr W.J.P.Carr, former manager, Mr I.W. Robinson, Deputy manager, Miss J. Verster, sociologist and members of the staff of the Non-European Affairs Department, City of Johannesburg, for their help in obtaining the urban sample;

Dr J.F. Potgieter (former Coordinator of the S.A.I.B.P.) and Dr N.F. Laubscher, who supervised the selection of the rural sample;

The management of Veneered Plywoods Ltd., and in particular Mr W.M. Pankiw, for providing the sample on which the Urban-Rural Scale was developed;

The management of Durban Roodepoort Deep, who provided samples and testing facilities for some of the pilot studies;

My colleagues, Mr D.R. Mugudamane, who translated the manuals into Venda and assisted with the administration and marking of the tests; Mr M.N. Machaba, who administered most of the tests and assisted with the marking;

The following N.I.P.R. staff members who participated in the pilot studies and fieldwork of the final study:

Mrs J. Kuper and Messrs. D.P.M. Beukes, P.D. Griffiths, P. Bodibe, I. Tekane, V. Nikani and S.M. Mngomezulu;

Mrs A. Bold, who typed the manuscript, and finally

My wife, Catherine, without whose help, patience and
forebearance this study could not have been done.

G.V. Grant.

"African research programmes should ... be preferably directed towards the measurement of limits of modifiability of African behaviour, and towards a definition of the environmental factors that determine these limits. Such research does not aim at ultimate theoretical limits, obtainable only, if at all, by means of artificial laboratory experiments without relevance to African social development. It has the more realistic objective of finding out what can be achieved by means of measures that are practicable now, or that will be so in the future. As such, it is socially valuable, providing a means whereby African potentialities can be more fully realised and whereby group differences in well-being can be reduced."

Simon Biesheuvel, 1958, p. 157.

ABSTRACT

This study is concerned with the organization of mental abilities of an African ethnic group in cultural transition from a rural-illiterate to an urban-literate state. It was undertaken in order to determine what effects literacy and urbanization have on: a) the structure of intelligence and b) level of performance on cognitive tests. Pilot studies were conducted with a view to overdetermining a number of cognitive abilities and to selecting a diverse battery of reliable cognitive tests for use in the investigation. A scale, with which to measure urbanization objectively, was also constructed. Samples of 199 rural and 218 urban adult Venda males were tested on a battery of 16 cognitive tests. The analysis involved comparing mean levels of performance of the groups on these tests, comparisons of intellectual structure by a) traditional factor analytic means and b) an inter-group factor analysis procedure. The results showed that both scholastic education and urbanization improve levels of performance on the tests and that scholastic education, but not urbanization, brings about a change in the organization of mental abilities. The results are discussed in terms of two theories on the differentiation of abilities.

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INTRODUCTION

The International Biological Programme (I.B.P.) is a world-wide plan of research concerned with the biological basis of productivity and human welfare. Discussions leading to the I.B.P. started in 1959 and were stimulated by the success of the International Geophysical Year. A planning committee was formed in 1962, but the programme was not formalized until July, 1964. The operational programme started formally on 1st July, 1967 and is destined to run for five years.

In order to provide an operating framework for its research, the I.B.P. was divided into seven sections. In the section Human Adaptability (H.A.) which covers subjects such as tolerance to heat, cold and high altitudes, among others, it was decided that cultural aspects of human adaptability should be included. The South African contribution to this section was of a multi-disciplinary kind, involving nutrition status surveys, psychological and sociological investigations as well as studies on the physical characteristics and disease patterns of a population. It was decided that the adult males of the Venda tribe would be studied from the point of view of changing from a rural peasant to an urban industrialized life. Urbanization as a process of human adaptation was a logical area of investigation in a country like South Africa.

In order to obtain an objective measure of urbanization it was decided that a measuring device be constructed for this purposes. The research which was involved in the construction of this device was carried out by the writer and is described in Chapter VI. The selection of the sample was a major task involving many problems. The writer assumed an active role in selecting the sample particularly that from the urban area. This involved conducting a demographic survey designed to identify the subjects for inclusion in the sample.

The writer's interest in the influences of urbanization and education on cognitive abilities arose out of a study which he conducted in 1965 (Grant, 1965). In this particular study the construction of a test of conceptual reasoning ability was described. In assessing the factors which influenced performance on the test the author wrote:

"It is likely that schooling and urbanization encourage greater differentiation and integration in the organism and that it manifests itself in the form of a higher level of abstract reasoning ability" (p. 124).

It was not clear at this stage whether these factors influenced other cognitive abilities nor was it known whether urbanization and education influenced the structure of intellect. The methodology to investigate these two important aspects of human adaptability was formulated during 1966. The advent of the I.B.P. provided the opportunity to test certain hypotheses which had been formulated.

Author Grant Gerard Vincent

Name of thesis The organization of mental abilities of an African ethnic group in cultural transition. 1969

PUBLISHER:

University of the Witwatersrand, Johannesburg

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